

**AMENDMENT NO. 24**

STATE OF WASHINGTON

**RADIOACTIVE MATERIALS LICENSE**

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Pursuant to the Nuclear Energy and Radiation Control Act, RCW 70.98, and the Radiation Control Regulations, Chapters 246-220 through 246-255 WAC, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below; and to use such radioactive materials for the purpose(s) and at the place(s) designated below. **This license is subject to all applicable rules and regulations promulgated by the State of Washington Department of Health.**

<b>1. Licensee Name:</b>  DAWN MINING COMPANY, L.L.C	<b>3. License Number:</b>  WN-1043-2 is amended in its entirety to read as follows:
<b>2. Address:</b>  5326 Uranium City Road Ford, Washington 99013  Attn: Robert Nelson, General Manager	<b>4. Expiration Date:</b>  31 January 2012  <b>5. Reference Number(s):</b>

**6. Radioactive Material**  
(element and mass number).**7. Chemical and/or Physical Form.****8. Maximum quantity licensee may possess**  
at any one time.6.A. 11.e(2) byproduct  
material.

7.A. Any.

8.A. Unlimited.

6.B. Source material.

7.B. Filtercake sludge from the  
Midnite Mine Water Treat-  
ment Plant (MMWTP).8.B. Not to exceed 550,000  
cubic feet.

6.C. Source material.

7.C. Yellowcake ( $U_3O_8$ ).8.C. Not to exceed 75 cubic  
feet.

6.D. Strontium-90/Yttrium-90.

7.D. Sealed source.

8.D. 350 microcuries.

**CONDITIONS****9. Authorized use.**

- A. Possession of byproduct material generated by the licensee's past milling operations.
- B. Possession of MMWTP filtercake sludge generated by the water treatment facility at the Midnite Mine to be directly disposed into TDA-4.



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- C. Possession of yellowcake from the decommissioning of the licensee's facility.
  - D. Calibration source.
10. A, B, C, & D. The authorized place for use shall be the licensee's facility, located at 5326 Uranium City Road, Ford, Washington.
11. The licensee shall comply with the provisions of RCW 70.121.030, "Mill Tailings--Licensing and Perpetual Care;" Chapter 246-220 WAC, "Radiation Protection--General Provisions;" Chapter 246-221 WAC, "Radiation Protection Standards;" Chapter 246-222 WAC, "Radiation Protection--Worker Rights;" Chapter 246-235 WAC, "Radioactive Materials--Specific Licenses;" and Chapter 246-252 WAC, "Radiation Protection--Uranium and/or Thorium Milling," and is subject to the rules, regulations, and orders of the Department of Health now or hereafter in effect, and to the additional conditions specified or incorporated in this license.

**GENERAL OPERATION**

12. The licensee is hereby exempted from the requirements of Chapter 246-221-120(8) and (9) for areas and containers within the millsite, provided that all entrances to the property are conspicuously posted in accordance with WAC 246-221-120 and with the words, "CAUTION--ANY AREA OR CONTAINER WITHIN THIS AREA MAY CONTAIN RADIOACTIVE MATERIALS."
13. Radioactive material shall be used by, or under the supervision of the Site Manager, Robert Nelson, the licensee's Radiation Safety Officer (RSO), Jan Johnson, or the licensee's Radiation Safety Technician, Gerald Cates.
14. The licensee's RSO shall be responsible for matters dealing with radiological safety aspects of the licensed facility, and shall be ultimately responsible to the company President for matters related to radiation safety.
15. The RSO or his/her designee shall be qualified as specified in Standards Procedure DMOP 01.
16. The RSO or his/her designee shall have the authorities and responsibilities which are contained in DMOP 01. The RST shall receive a minimum of 8 hours of related health and safety refresher training every two years.
17. Individuals designated as authorized users shall report to the RSO on matters dealing with radiological safety. The RSO or his/her designee shall be accessible to the authorized users at all times. Authorized users shall have qualifications as specified in DMOP 01 or equivalent. Any person newly hired as an authorized user shall have all work reviewed and approved by the RSO



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as part of a comprehensive training program until appropriate course training is complete.

18. The licensee shall notify the department in writing 30 days prior to any change in the licensee's business structure, and shall notify the department of the appointment of a new Site Manager, RSO, or RST, describing how the appointee meets or exceeds the minimum qualifications specified in the Standards Procedure DMOP 01.

**FACILITY OPERATIONS**

19. The licensee shall not allow eating, drinking, smoking, and chewing of tobacco in the restricted areas.
20. For any major operations not previously reviewed by the department, the licensee may propose demonstration plans of limited time and scope-of-work to the department for approval. The licensee must describe the beginning and ending date and the specific scope-of-work proposed. The department must approve proposed demonstration plans, with conditions, if needed, before implementation. Demonstration plans may convert to continuing operational plans upon successful demonstration, submittal of appropriate plans, specifications, work plans, or operational procedures, and department approval.
21. A. The licensee shall maintain and utilize only those operating procedures and Quality Assurance Procedures (DMOP/DMQP) approved by the department. Any change to those procedures must be approved by the department. Departmental approval of new or revised procedures shall constitute incorporation by reference of those procedures. The licensee shall have all written procedures reviewed and approved by the RSO before a change in a procedure is proposed.
- B. An up-to-date copy of each written procedure, including accident and fire protection plans, as controlled under the quality assurance (QA) procedures, shall be kept in each area where it is used.
22. The licensee shall require the Radiation Safety staff to perform and document inspections of all work areas at least monthly. The licensee shall initiate corrective action for any deficiencies noted during the inspection within seven working days. The results of the inspections and any necessary corrective actions shall be reported in the ALARA Report.
23. The licensee shall perform an annual ALARA audit of the radiation safety program which shall be led by the RSO. This audit must be completed by May 31 of each year. The audit team should contain a representative from company management. A report of this audit shall be submitted to company headquarters and to the department within 60 days after conducting the audit. The report shall include summaries of the analytical results of the radiological surveys.



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The audit shall also address any noticeable trends in personnel exposures for identifiable categories of workers and types of activities, any trends in radiological effluent data, and the performance of exposure and effluent control equipment as well as its utilization, maintenance, and inspection history. Any recommendations to further reduce personnel exposures or environmental releases of uranium or radon and radon progeny shall be included in the report.

In order to evaluate the ALARA objective, the licensee shall, at a minimum, review the following records:

- A. Bioassay results, including any actions taken when the results exceeded the action levels listed in DMOP 03.
  - B. Records of external and internal exposure.
  - C. Safety meeting minutes, attendance records, and training program records.
  - D. Any radiological inspection reports required by this license.
  - E. Radiological survey and monitoring data, as well as environmental radiological effluent and monitoring data.
  - F. Surveys required by radiation work permits.
  - G. Reports of overexposure submitted to the department.
  - H. Reviews of operating and monitoring procedures completed during the period.
24. The licensee shall maintain a bioassay program in accordance with DMC's Operating Procedure DMOP 03.
25. The licensee shall conduct annual operational training that covers all aspects of operational safety and emergency procedures for site employees. The DMOP's and DMQP's shall be used to conduct operations training to ensure consistency and thoroughness. Additionally, the annual ALARA audit report required by Condition 23 of this license shall be a part of the annual refresher training.
26. In addition to the required personnel monitoring, the licensee shall monitor the following locations to demonstrate compliance with WAC 246-221. The licensee shall:
- A. Monitor at least the following areas for air concentrations of radon and airborne particulates:



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- (1) All administration buildings (continuous—radon only)
  - (2) Any other normally occupied structure within the site perimeter, as required by the department.
  - B. Continuously monitor the site perimeter for radon and airborne particulates, at locations specified in Appendix A.
  - C. Utilize personnel lapel sampling in accordance with DMOP 05.
27. Release of equipment from the restricted area shall be in accordance with DMOP 04.

**MIDNITE MINE FILTERCAKE SLUDGE RECEIPT AND IMPOUNDMENT OPERATIONS**

28. The licensee shall maintain a shipment record for MMWTP filtercake sludge received for disposal at the facility. As a minimum, the shipment record shall include:
- A. Date of receipt of MMWTP filtercake sludge.
  - B. Date of placement of MMWTP filtercake sludge into TDA-4.
  - C. The calculated volume of each shipment of MMWTP filtercake sludge.
  - D. General placement location in TDA-4 of MMWTP filtercake sludge, as specified in DMOP 18.
29. The licensee shall use procedures specified in DMOP 18 to verify that chemical concentrations in MMWTP filtercake sludge do not characterize the sludge as "dangerous waste" or "hazardous waste," per Chapter 173-303 WAC.
30. In the event that testing of the MMWTP filtercake sludge characterizes the sludge as a hazardous or dangerous waste, DMC shall take appropriate action as specified in DMOP 18.
31. Vehicles hauling MMWTP filtercake sludge to the site shall display a current vehicle safety inspection certificate consistent with DMOP 18.
32. The transport of licensed material by the licensee, or the delivery of licensed material to a carrier for transport, shall be in accordance with WAC 246-231, "Packaging & Transportation of Radioactive Material."



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33. Unless specifically approved by the department, receipt and disposal of MMWTP filtercake sludge at the licensee's millsite shall cease December 31, 2008.

**TDA 4 FILLING AND STABILIZING OPERATIONS**

34. The licensee must submit a Facility Utilization Report to the department by May 31 of each year. The Facility Utilization Report shall include, as a minimum the following:
- A. Aerial photograph of the site.
  - B. A summary of any TDA-4 maintenance activities.
  - C. The impounded volume of fill materials in TDA-4 from all sources.
  - D. A summary of the calculated volume and radionuclide activity in the MMWTP filtercake sludge placed in TDA-4 in accordance with DMOP 18.
  - E. Any instances in which observed site or waste characteristics were significantly different from those described in applicable documents and license requirements.
  - F. Any other information that the department may require.

**ENVIRONMENTAL**

35. The licensee shall conduct an environmental monitoring program capable of detecting the potential contribution of radioactive material from the site to the environment. The program shall include collection of samples and analyses at frequencies specified in Appendix A (Radiological Monitoring Program), samples and analyses required by the ground water Corrective Action Assessment and Groundwater Protection Program, and DMC procedures approved by the department. At a minimum, a comprehensive annual report of all department-required sample analyses, with statistical trend analyses and discussions of all anomalous results and actions taken, point of compliance monitoring results, as well as the non-radiological contaminants and parameters shall be forwarded to the department by May 31 of each year. The report shall be submitted in accordance with the department's document entitled "Recommended Content and Format for Annual Environmental Reports." Deviations in the reporting format must be approved by the department.
36. The licensee shall conduct the following groundwater and surface water monitoring programs at the millsite:
- A. Environmental monitoring, consistent with requirements set forth in Appendix A.



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- B. Point-of-compliance monitoring, consistent with requirements approved by the department. The monitoring wells to be monitored, consistent with requirements established by 40 CFR 192, are wells designated as GW-6, GW-1A, GW-1B, GW-2, GW-13, and GW-14A.
  - C. Corrective action monitoring as set forth in the Corrective Action Assessment (CAA) and Groundwater Protection Program (GPP). The department may require the modification of the Groundwater Protection Program.
  - D. At the conclusion of the Corrective Action Assessment, DMC shall submit a revised Groundwater Protection Program Plan for DOH review and approval.
37. The groundwater and surface water monitoring shall involve collecting representative samples from each well and surface water site specified in the environmental monitoring plan, point-of-compliance monitoring program, CAA and GPP monitoring, including any new wells that may be added to this list in the future. Results and analyses of the groundwater and surface water monitoring programs shall be reported to the Department of Health on the following schedules:
- A. Environmental monitoring data and point-of-compliance monitoring data for each calendar year shall be reported to the department in the annual Environmental Monitoring Report, due by the following May 31 of each year.
  - B. Groundwater monitoring data associated with the CAA and GPP shall be reported annually, by May 31 of each year or consistent with direction from the department.
  - C. The department may require the modification of the groundwater and surface water monitoring program.
38. The licensee shall report any spill in accordance with the Spill Response Plan.
39. The licensee shall maintain an ongoing data review program. This review should concentrate on critical sampling media; i.e., air particulates, ground and seepage water at critical stations, direct radiation and radon gas levels. Data shall be reviewed, evaluated, and reported consistent with Dawn Mining Company Quality Assurance Procedure, DMQP 33. Results exceeding action levels that cannot be attributed to sampling or analytical anomalies or to calculational errors shall be reported in writing to the department within 30 days of the determination. The report shall include corrective actions that are being taken or planned.



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**EVAPORATION SYSTEM OPERATIONS**

40. The licensee shall operate the evaporation system consistent with DMOP 13 and the following specific conditions:
- A. The licensee shall discharge winter-collected meteoric water consistent with department-approved procedures.
  - B. The licensee shall prepare and submit an evaporation pond operations annual report to the department by May 31 each year. The report shall include the following:
    - Water evaporation annual performance summaries and trends since 1996.
    - Water balance results from the previous calendar year.
    - Water balance predictions to complete evaporation pond operations (based on average weather conditions), including precipitation catchment and dewatering from TDA-4 operations.
    - Evaporation pond leak detection evaluations.
    - Inspection and maintenance.

**INTEGRATED PROJECT SCHEDULE**

41. The licensee shall submit an update of the IPS by November 30 of each year. The report shall include descriptions of each major task sufficient for independent department review, the schedule and interdependency of tasks, and an updated financial surety estimate. The IPS shall include all tasks sufficient to meet Chapter 246-252 WAC, approved closure plans, final environmental review documents, and all applicable requirements of this license. Operational plans and procedures linked to the tasks shall be included as appendices of the IPS.

The IPS must address the following major tasks:

**ENVIRONMENTAL MONITORING**

**GROUNDWATER REMEDIATION**

**EVAPORATION SYSTEM OPERATIONS**

**MILL OPERATIONS AND SHUTDOWN**

**MILL DECOMMISSIONING AND DISPOSAL OPERATIONS**

**CONTAMINATED SOIL CLEANUP AND DISPOSAL OPERATIONS**





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**MMWTP FILTERCAKE SLUDGE DISPOSAL OPERATIONS**

**TDA-4 FILLING AND STABILIZATION OPERATIONS**

**BORROW SOURCE DEVELOPMENT**

**TDA-4 RE-CONTOURING RECLAMATION**

**FLOOD DIVERSION CONSTRUCTION**

**TDA 1-3 RECLAMATION**

**BORROW SOURCE RESTORATION**

**MONITORING AND STABILIZATION OPERATIONS**

**LICENSE TERMINATION**

**LONG-TERM SURVEILLANCE AND MAINTENANCE PLANNING**

42. The licensee shall submit IPS task duration and dependency descriptions in annual updates of the IPS. Each IPS task duration and dependency must be based on one or more of the following:
- A. Estimates of task duration times, using standard engineering methods.
  - B. The evaluation of contingency requirements before beginning or ending a task.
  - C. Interim schedule milestones for TDA-4 filling and stabilization operations, TDA-4 re-contouring and reclamation, evaporation pond operations, and TDA 1-3 reclamation and flood diversion construction.
  - D. Time available between the earliest beginning and latest finishing time for each task.

**ENGINEERING**

43. Before engaging in any major construction-related activities not previously evaluated by the department, the licensee shall prepare and record an environmental evaluation and an ALARA analysis of such activity. The licensee must provide a written evaluation of such activities and obtain prior approval of the department.



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44. Detailed design and specifications must be prepared for each major construction activity, reviewed and approved by a licensed engineer, and submitted to the department for approval, prior to commencement of construction for that activity. When approved, detailed design and specifications shall be placed under document control procedures. Any modifications of detailed design and specifications must be approved by the department.
45. Quality Control procedures that meet the requirements of the license and closure plan, including detailed design and specifications for each major construction activity, shall be submitted to the department for approval, prior to commencement of construction for that activity.
46. Within 120 days after completion of each construction activity, provide a construction report that includes: (1) as-built documents; and (2) a stamped, licensed engineer review verifying that construction was concluded and meets design plans and specifications.

**FINANCIAL**

47. The licensee shall maintain a department-approved financial surety arrangement consistent with WAC 246-252-090, Criterion 9. This requirement may be satisfied by a department-approved financial surety bond or other acceptable financial instrument.

The licensee shall submit updated closure cost estimates annually by November 30, and provide the closure cost estimates with the IPS. The licensee shall also submit updated closure cost estimates no later than 60 days following any modification or re-evaluation of the closure plan that affects closure costs, and no later than 60 days after the department may otherwise request an update. For each update of estimated closure costs, the licensee shall submit to the department supporting documentation showing a breakdown of the costs and the basis of the updated cost estimate, with adjustments for inflation, changes in engineering plans, activities performed, and any other conditions affecting the estimated costs for site closure. Following the licensee's submission of any updated closure cost estimate, the department will review and comment in writing on the closure cost estimate. Such comments may concur with or may order revisions to the licensee's closure cost estimate. The licensee shall be entitled to obtain review of an order of the department directing any material revisions to the licensee's closure cost estimate. Such review shall be by adjudicative proceeding, conducted pursuant to Chapter 246-10 WAC, including the right to judicial review in accordance with WAC 246-10-706. The licensee shall revise its financial assurance in accordance with a final order of the department.

48. The licensee shall notify the department, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any Chapters of Title II (Bankruptcy) of the United States Code (USC) by or against:



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- A. The licensee;
- B. An entity [as the term is defined in 11 USC, Section 101(14)] controlling a licensee or listing the license or licensee as property of the estate; or
- C. An affiliate [as the term is defined in 11 USC, Section 101(2)] of the licensee, and
- D. The licensee's notification must also indicate the bankruptcy court in which the petition for bankruptcy was filed; and
- E. The date of the filing of the petition.

**CLOSURE**

- 49. Six months prior to proposed license termination and transfer of the facility to the government for long-term custody, in accordance with WAC 246-252-030, the licensee shall provide a report which demonstrates that the site has met all post-reclamation Monitoring and Stabilization Plan (MSP) requirements and all remaining license conditions.
- 50. Final closure for the DMC millsite, including completing emplacement of the final earthen cover to limit radon emanation to no more than 20 pCi/m<sup>2</sup>-sec, and tailings recontouring, stabilization, and erosion protection, must be completed by December 31, 2013, in accordance with WAC 246-252-030(6)(A). This license condition may be amended by the department as necessary for reasons of technological feasibility, inclement weather, litigation resulting in delays in emplacement, or other factors beyond the control of the licensee.
- 51. The MSP shall include the period after tailings reclamation construction, and prior to license termination. The purpose of the MSP is to provide specific monitoring and inspection requirements to verify construction performance. Action levels and/or performance criteria, and actions necessary to assure continued compliance with the Tailings Reclamation Plan, detailed design plans, and specifications shall be included. The MSP shall be a section of the IPS.
- 52.
  - A. The licensee shall conduct a physical inventory every six (6) months to account for all sealed sources received and possessed under this license. The records of the inventories shall be maintained for inspection by the department, and shall include the quantities and kinds of radioactive material, location of sealed sources, and the date of the inventory.
  - B. The licensee is authorized to perform leak test sampling in accordance with their radioactive materials license application. The analysis shall be performed by persons specifically authorized by the department, the U.S. Nuclear Regulatory Commission, an Agreement State, or a Licensing State to perform such services. Alternatively, leak test



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samples may be collected and/or analyzed by other persons specifically authorized by the department, the U.S. Nuclear Regulatory Commission, an Agreement State, or a Licensing State to perform such services. Licensing State authorization only applies to naturally occurring and accelerator produced radioactive material (NARM).

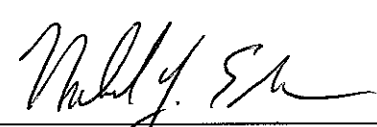
**INCORPORATION BY REFERENCE**

53. Except as specifically provided by this license, the licensee shall possess and use radioactive material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in the documents listed below. The department's "Rules and Regulations for Radiation Protection," Title 246 WAC, shall govern the licensee's statements in applications or letters, unless statements are more restrictive than the regulations. Any change to the documents listed below shall require departmental approval in the form of an amendment to this license.
- A. Ground water protection plan dated April 25, 1994.
  - B. Closure plan dated May 1994, and letter and attachments dated December 28, 1994.
  - C. Revised license renewal application, and attachments dated June 23, 2006.
  - D. Letter and attachment dated February 16, 2000, for the direct disposal of MMWTP filtercake sludge into TDA-4.

**FOR THE STATE OF WASHINGTON DEPARTMENT OF HEALTH**

Date 18 January 2007

BY

  
Mikel J. Elsen, Supervisor  
Waste Management Section  
Office of Radiation Protection



## APPENDIX A

## RADIOLOGICAL MONITORING PROGRAM

<u>Type of Sample</u>	<u>Location</u>	<u>Sample Collection</u>	<u>Method</u>	<u>Sampling Frequency</u>	<u>Type of Analysis</u>	<u>Sample Analysis</u>
Radon Gas	Stations: 2-1 2-2 2-3 2-4 2-5 2-B (control)	Passive		Continuous with Quarterly Evaluation	Radon-222	
Direct Gamma	Stations: 2-1 2-2 2-3 2-4 2-5 2-B (control)	TLD		Continuous with Quarterly Evaluation	Gamma	
Groundwater	Wells: GW-1A GW-1B GW-2 GW-3 GW-6 GW-12 GW-13 GW-14A	Grab		Quarterly	Dissolved Natural Uranium, pH, TDS, SO <sub>4</sub> , Na, Ca, Mg, Cl	
Domestic Wells	Wells: DW-3 DW-4 (or DW-6)	Grab		Semi-Annual	Dissolved Natural Uranium, pH, TDS, SO <sub>4</sub> , Na, Ca, Mg, Cl	
Seepage Water (if flowing)	SW2B SW2C SW2D	Grab		Quarterly	Dissolved Natural Uranium, Ra 226, pH, TDS, SO <sub>4</sub> , Na, Ca, Mg, Cl	

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## RADIOLOGICAL MONITORING PROGRAM

<u>Type of Sample</u>	<u>Location</u>	<u>Sample Collection</u>	<u>Method</u>	<u>Sampling Frequency</u>	<u>Type of Analysis</u>	<u>Sample Analysis</u>
Air Particulates	2-1	2-2	Low volume	Continuous with Quarterly Evaluation	Natural Uranium, Ra- <sup>226</sup> , Th- <sup>230</sup>	
		2-3				
Surface Water		SW-4 SW-5	Grab	Semi-Annual	Dissolved and suspended* Natural Uranium, Ra- <sup>226</sup> , pH, TDS, SO <sub>4</sub> , Na, Ca, Mg, Cl	
Soil	Stations:	2-1	Grab	Annual	Natural Uranium, Ra- <sup>226</sup> , Pb- <sup>210</sup>	
		2-2				
		2-3				
		2-4				
		2-5				
		2-B (control)				
Sediment		SW-5	Grab	Annual	Natural Uranium, Ra- <sup>226</sup> , Th- <sup>230</sup> , Pb- <sup>210</sup>	
		SW-4				
		SW-2B				
		SW-2C				
		SW-2D				

\* Radionuclides only